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BSSE (7th SEM)

Object Oriented Programming

Q1. What is Class and role of object in a Class, explain in detail with the help of a suitable program?

Ans: A class is a set of instruction to build a specific type of object. It is a user-defined data type, which holds its own data members and member functions, which can be accessed and used by creating an instance of that class.

Object determines the behavior of the class. From a programming point of view, an object can be a data structure, a variable or a function. It has a memory location allocated. The object is designed as class hierarchies.

Example:

```
import java.util.Scanner;

//creating first class
public class ClassObject{

    public static void main(String[] args) {

        int Value;
//creating new object for second class
        Second object = new Second();

// output of calling object
        System.out.println(object.w);

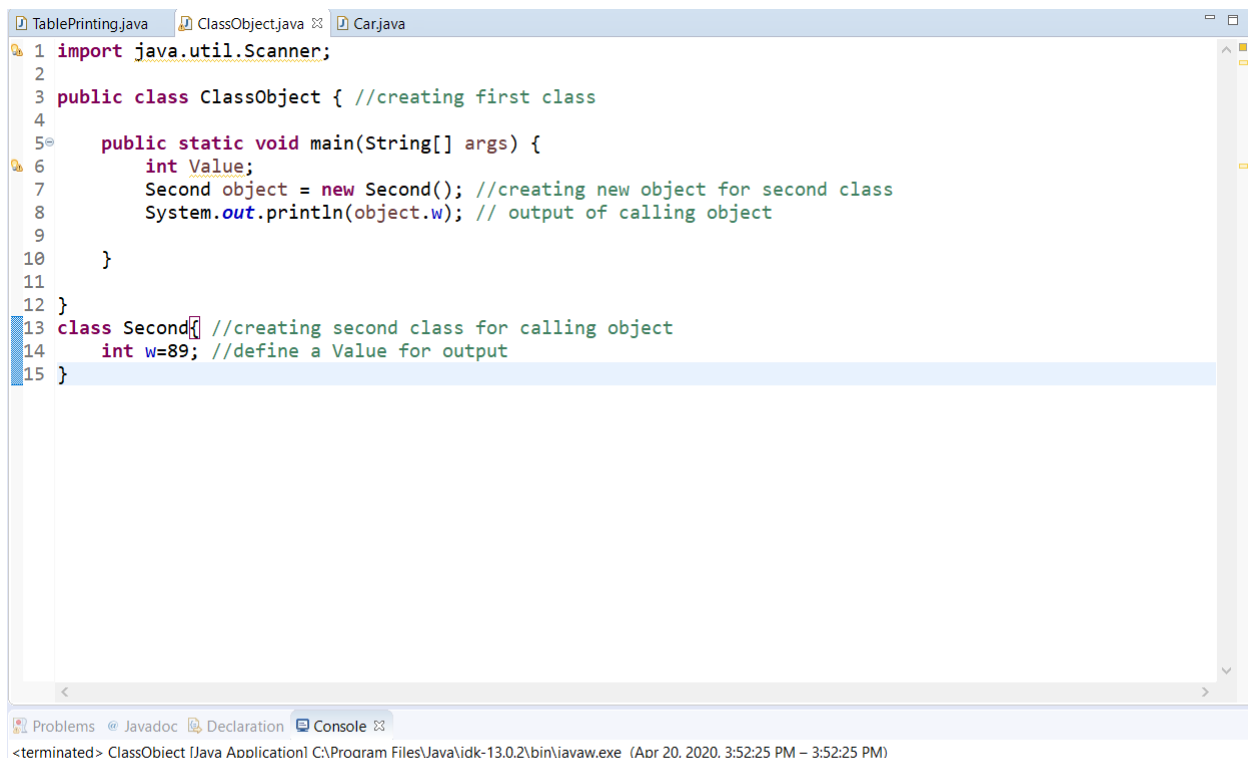
    }

}
```

```
//creating second class for calling object
class Second{

//define a Value for output
    int w=89;
}
```

OUTPUT



The screenshot shows an IDE window with three tabs: TablePrinting.java, ClassObject.java, and Carjava. The ClassObject.java tab is active, displaying the following code:

```
1 import java.util.Scanner;
2
3 public class ClassObject { //creating first class
4
5     public static void main(String[] args) {
6         int Value;
7         Second object = new Second(); //creating new object for second class
8         System.out.println(object.w); // output of calling object
9
10    }
11 }
12 }
13 class Second{ //creating second class for calling object
14     int w=89; //define a Value for output
15 }
```

Below the code editor, the Console tab is visible, showing the output of the program:

```
<terminated> ClassObject [Java Application] C:\Program Files\Java\jdk-13.0.2\bin\javaw.exe (Apr 20, 2020, 3:52:25 PM – 3:52:25 PM)
89
```

Q2. Write a program about table printing which takes input from the user on the basis of OOP and explain in detail.

Ans:

```
import java.util.Scanner;

public class TablePrinting {

    public static void main(String[] args) {
        //Here we create an object of class
        Scanner obj = new Scanner(System.in);
        //Here we print the output of taking user input
        System.out.println("Enter the Value =");

        int x = obj.nextInt(); //Read the User input

        for(int y=1;y<=10;y++)
        {
            //Table printing of entered user
            System.out.println(x*y);
        }
    }
}
```

OUTPUT

```
TablePrinting.java
1 import java.util.Scanner;
2
3 public class TablePrinting {
4
5     public static void main(String[] args) {
6         //Here we create an object of class
7         Scanner obj = new Scanner(System.in);
8         //Here we print the output of taking user input
9         System.out.println("Enter the Value =");
10
11         int x = obj.nextInt(); //Read the User input
12
13         for(int y=1;y<=10;y++)
14         {
15             //Table printing of entered user
16             System.out.println(x+"x"+y+"="+x*y);
17         }
18     }
19 }
20
```

Problems Javadoc Declaration Console

<terminated> TablePrinting [Java Application] C:\Program Files\Java\jdk-13.0.2\bin\javaw.exe (Apr 20, 2020, 2:14:43 PM – 2:14:48 PM)

Enter the Value =
4
4x1=4
4x2=8
4x3=12
4x4=16
4x5=20
4x6=24
4x7=28
4x8=32
4x9=36
4x10=40

Q3. Write a program about any 2 cars which can calculate the performance of both of them and explain in detail.

```
public class Car {

    public static void main(String[] args) {
        //we create object of both class ferrari and fordCar
        Ferrari fer = new Ferrari();
        FordCar ford= new FordCar();

        //Here we comapare all atributes for ferrari if ferrari
attributes is high
        if(fer.MaxSpeed>ford.MaxSpeed && fer.Engine>ford.Engine &&
fer.suspension>ford.Engine)
        {
            System.out.println("Ferrari is the fastest");
            System.out.println("And Ford is slower than Ferrari");
        }

        //Here we comapare all atributes for ford if ford attributes
is high
        if(fer.MaxSpeed<ford.MaxSpeed && fer.Engine<ford.Engine
&& fer.suspension<ford.Engine)
        {
            System.out.println("Ford is the fastest");
            System.out.println("And Ferrari is slower than Ford");
        }

    }

}

class Ferrari{ //Here we add some data of first car
    int MaxSpeed = 251;
    double Engine = 2.7;
    double suspension = 57;
}

class FordCar{ //Here we add some data of Second car
    int MaxSpeed = 250;
    double Engine = 2.6;
    double suspenson = 56.1;
}
```

OUTPUT

```
TablePrinting.java ClassObject.java Carjava
1
2 public class Car {
3
4     public static void main(String[] args) {
5         //we create object of both class ferrari and fordCar
6         Ferrari fer = new Ferrari();
7         FordCar ford= new FordCar();
8
9         //Here we compare all attributes for ferrari if ferrari attributes is high
10        if(fer.MaxSpeed>ford.MaxSpeed && fer.Engine>ford.Engine && fer.suspension>ford.Engine)
11        {
12            System.out.println("Ferrari is the fastest");
13            System.out.println("And Ford is slower than Ferrari");
14        }
15
16        //Here we compare all attributes for ford if ford attributes is high
17        if(fer.MaxSpeed<ford.MaxSpeed && fer.Engine<ford.Engine && fer.suspension<ford.Engine)
18        {
19            System.out.println("Ford is the fastest");
20            System.out.println("And Ferrari is slower than Ford");
21        }
22    }
23
24 }
25 class Ferrari{ //Here we add some data of first car
26     int MaxSpeed = 251;
27     double Engine = 2.7;
28     double suspension = 57;
29 }
```

<terminated> Car [Java Application] C:\Program Files\Java\jdk-13.0.2\bin\javaw.exe (Apr 20, 2020, 3:45:57 PM – 3:45:57 PM)

Ferrari is the fastest
And Ford is slower than Ferrari